

Application No. 09/834,672
Response dated February 16, 2004
Reply to Notice of Non-Compliant mailed January 14, 2004

Amendments to the Claims are reflected in the listing of claims, which begin on page 2 of this paper.

Remarks/Arguments begin on page 8 of this paper.

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-42 (canceled).

Claim 43 (new): A modular construction system comprising:

an inventory of panel shapes that are derived from a common format, the format being a three dimensional cube grid defined by twenty-seven sub-cubes within a single large cube, the sub-cubes having corners that form sixty-four vertices within the grid, wherein straight line radians are dawn between the sixty-four vertices to define fifty-nine two dimensional plane shapes of three and four radian sides with corresponding three and four corners corresponding with the points of intersection of the radians, the two-dimensional plane shapes when projected into three-dimensional space become fifty-nine panel shapes having three and four sides with corresponding three and four corners, and a panel thickness which constitute an inventory of fifty-nine three-dimensional panels that may be joined to each other along their sides and corners to form complex structures.

Claim 44 (new): The modular construction system of claim 43 wherein the panels are asymmetrical, wherein no two sides of the same length.

Claim 45 (new): The modular construction system of claim 44 wherein the panels have dimensions that occur in a plurality of sizes and proportions.

Claim 46 (new): The modular construction system of claim 43 wherein the panels are symmetrical, wherein all sides are of equal length or wherein pairs of parallel sides are of equal length.

Claim 47 (new): The modular construction system of claim 46 wherein the panels have dimensions that occur in a plurality of sizes and proportions.

Claim 48 (new): The modular construction system of claim 43 wherein the complex structures formed by the panels include a plurality of primary regular polyhedra including cubes, tetragonal primitives, orthorhombic primitives, isoceles prisms, right triangular prisms, trirectangular tetrahedra and right square pyramids, all being three dimensional, space enclosing structural forms providing an extensive inventory of geometric building blocks necessary for creating complex structures.

Claim 49 (new): The modular construction system of claim 48 wherein the regular polyhedra occur in a plurality of sizes and proportions which may be assembled in an indeterminate plurality of combinations for forming a plurality of complex structures that include buildings and structural frameworks.

Claim 50 (new): The modular construction system of claim 43 wherein the complex structures formed by the panels include a plurality of irregular and complex polyhedra such as icosahedrons and rhombicuboctehedrons, all being three dimensional, space enclosing structural forms providing an extensive inventory of geometric building blocks necessary for creating complex structures.

Claim 51 (new): The modular construction system of claim 50 wherein the irregular and complex polyhedra occur in a plurality of sizes and proportions which may be assembled in an indeterminate plurality of combinations for forming a plurality of complex structures that include buildings and structural frameworks.

Claim 52 (new): The modular construction system of claim 43 wherein at least two panels are joined along their sides about a common axis, the axis being parallel, equidistant and symmetrically aligned between the sides of the at least two panels being joined and wherein the joined panels may be positioned at any dihedral angle with respect to each other through 360 degrees.

Claim 53 (new): The modular construction system of claim 52 wherein at least two panels are joined at their corners about a common vertice where the common axes between the sides of the at least two panels being joined intersect.

Claim 54 (new): The modular construction system of claim 53 wherein the at least two panels joined at their corners converge from at least 290 different angles.

Claim 55 (new): The modular construction system of claim 43 wherein the panels include a plurality of structural load-bearing struts attached along the sides of each of the panels, forming a framework around the perimeter of the panels to carry the weight of the panels and allow for connection to other panels.

Claim 56 (new): The modular construction system of claim 55 wherein the struts of the panels being joined are offset from, parallel to, and rotational about an axis centered between the panel sides, and wherein the panels are positioned anywhere around the axis through 360 degrees.

Claim 57 (new): The modular construction system of claim 56 wherein a first joinery system for connecting the sides of the panels together comprises at least one bracket perpendicularly attached to the struts of at least two panels, the bracket having an opening extending therethrough for accepting a cylindrical centerline element therein for connecting at least two panels together.

Claim 58 (new): The modular construction system of claim 57 wherein the cylindrical centerline element is an open-ended cylinder positioned exactly coincident with the axis centered between the panel sides being joined.

Claim 59 (new): The modular construction system of claim 57 wherein the at least one bracket is laterally adjustably positioned and attached perpendicular to the panel sides and bridge an opening between the struts and the cylindrical centerline element.

Claim 60 (new): The modular construction system of claim 59 wherein the opening between the struts and the centerline element allows for placement of service and utility lines and connection boxes.

Claim 61 (new): The modular construction system of claim 57 wherein the cylindrical centerline element is hollow allowing for the passage of service and utility lines therethrough.

Claim 62 (new): The modular construction system of claim 55 further comprising a second joinery system for connecting the corners of the panels together, the system comprising at least

one web horizontally attached to the centerline of the struts of at least two panels, at least one collar having an opening extending therethrough, at least one tab extension extending from one side of the collar that attaches to the web with fasteners, and a cylindrical centerline element that extends through the opening in the collar for connecting to a plurality of panels together, wherein the at least two panels joined at their corners converge from at least 290 different angles about a common vertice.

Claim 63 (new): The modular construction system of claim 62 wherein the cylindrical centerline elements are anchored to the webs by collars, which cylindrical arcuate shape forms a sleeve that wraps around a cylindrical centerline element and from which projects (extends) at least one tab that overlaps the web to which it is mechanically fastened by conventional means.

Claim 64 (new): The modular construction system of claim 62 further comprising a plurality of collars wrapping around centerline elements from which tab extensions attached to a plurality of webs projecting from the corners of a plurality of panel corners effect the linkage of a plurality of panels to each other at the corners joined about a common vertice;

Claim 65 (new): The modular construction system of claim 56 further comprising an opening between the panel corners and the cylindrical centerline element of panels being joined about a common vertice for the placement of service and utility lines through any given vertice about which a plurality of panels are joined.

Claim 66 (new): The modular construction system of claim 56 wherein the cylindrical centerline element is open-ended and hollow allowing for the passage of service and utility lines through the joinery of panels at the vertice.

Claim 67 (new): The modular construction system of claim 65 wherein the opening at the vertice allows for placement of a connecting node of a conventional space frame construction system including projecting spokes that are inserted into the cylindrical centerline elements which is anchored to the web by means of collars, in turn attached to the centerlines of panel corners effects the joinery of an assemblage of panels of the panel inventory about a given vertice to a conventional strut-node space frame construction system.

Claim 68 (new): The modular construction system of claim 65 wherein the opening at the vertice allows for the passage of structural bars anchored to and extending from conventional materials, through the joinery of assemblages at panel corners, to be inserted into the cylindrical centerline elements nearest the vertice, which anchored to webs, in turn anchored to panel corners effecting a joinery of an assemblage of panels from the panel inventory to conventional construction materials and systems.